

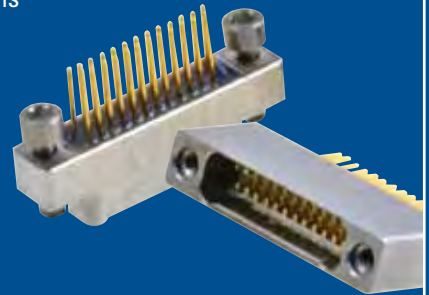


# NANO CONNECTORS

Nano-miniature, Dual row, 180 degree Connector, with Polarised shell providing optimum miniaturisation.

## FEATURES

- Both plug and socket available in 9,15,21,25,31,37 and 51 positions
- Dual Row 180 ° Pig Tail / Solder Cup
- 0.762 mm Pitch (0.030")
- Z Axis compression mating (Patent Pending)
- MIL-DTL-83513 Rated
- MIL-DTL-32139 Style
- Jackscrews 0.80 UNF
- Low mating Force
- Mechanical wipe contact action
- Non magnetic shell



## MATERIALS

<b>Insulator:</b>	Poyeltherimide (PEI)
<b>Socket Contact:</b>	Brass
<b>Socket Contact Plating:</b>	Gold Plated 1.25 microns (50 microins) min
<b>Plug Contact:</b>	Brass, Molybdenum
<b>Plug Contact Plating:</b>	Gold Plated 1.25 microns (50 microins) min Gold plated 0.5 microns (20 microins) min.
<b>Shell:</b>	303 Stainless Steel
<b>Shell Plating:</b>	Passivated to FED Spec QQ-P-35C type II (Def Stan 03-2 Method M)
<b>Sealing:</b>	Epoxy Compound

## ENVIRONMENTAL

<b>Operating Temperature:</b>	-55°C to +125°C
<b>Shock:</b>	50G's in accordance with MIL DTL 83513
<b>Vibration:</b>	20G's in accordance with MIL DTL 83513
Contact does not relax under the effects of time, temperature, thermal cycling and humidity	
<b>Salt Spray:</b>	48 hours in accordance with EIA-364-26 Condition B
<b>Humidity:</b>	96 hours in accordance with EIA-364-31 Condition B (except steps 7a and 7b)

## ELECTRICAL

<b>Current Rating:</b>	3 Amps max in Isolation, 1.8 Amps fully loaded @ 30 AWG wire
<b>Withstanding Voltage:</b>	600VAC @ Sea level
<b>Low level signal level Contact Resistance:</b>	36 milliohms typical mated pair
<b>Insulation Resistance:</b>	500V and 5000 Megohms (MIL DTL 83513, EIA-364-21)
<b>Contact Resistance:</b>	34 Millivolt when tested with 1 Amp current, 30 AWG wire ( EIA-364-27)

## MECHANICAL

<b>Mating Force:</b>	Min 0.56 N per contact for connector mating force (nominal performance)
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# CONTACT ARRANGEMENTS (Mating view of pin insert)



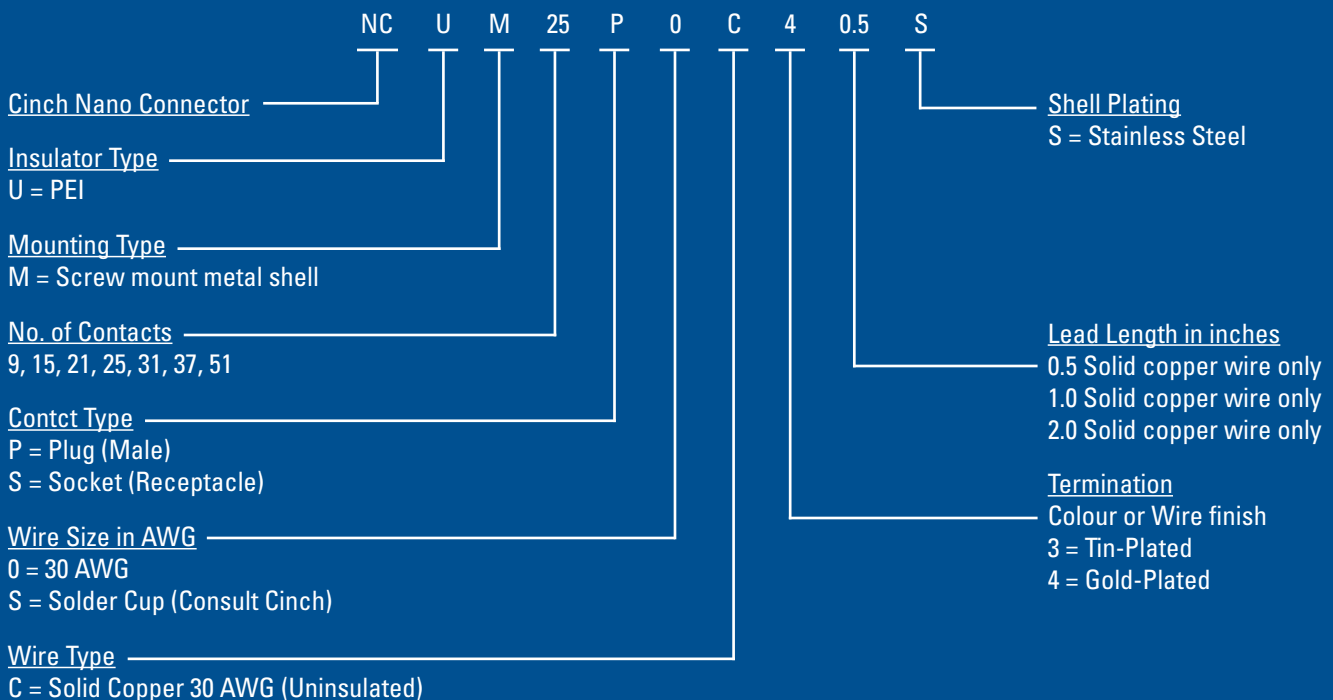
**Notes:**  
Engaging face of insert shown.  
Cavity identification numbers are for reference only and do not appear on the part.



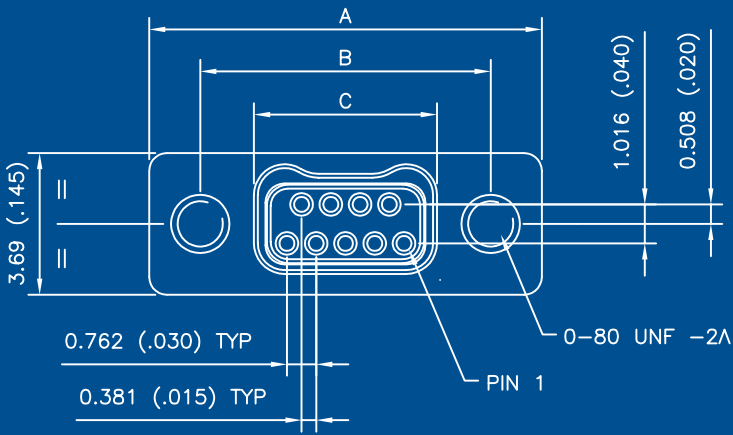
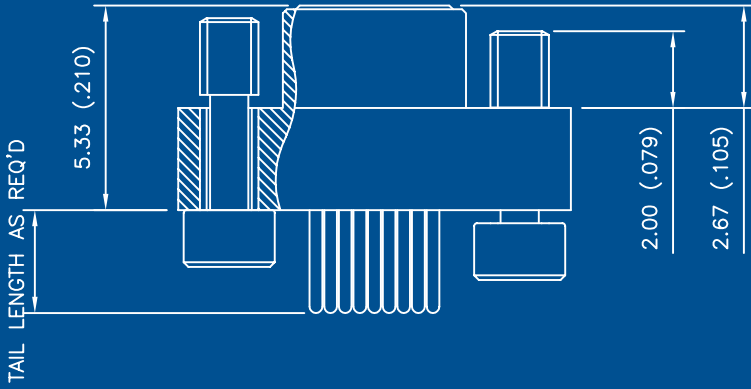
Plug Connector

Socket Connector

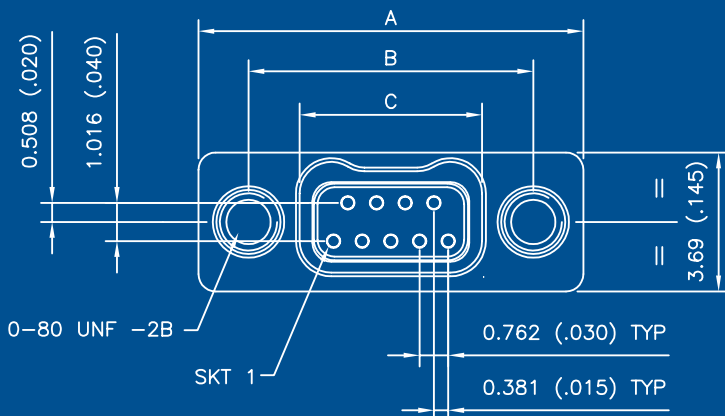
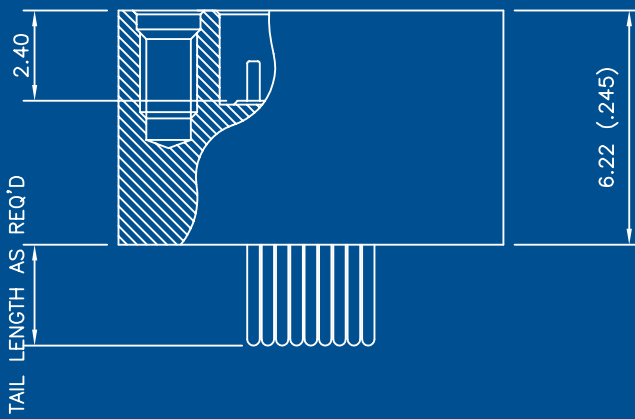
## Ordering Information



# Connector Dimensions



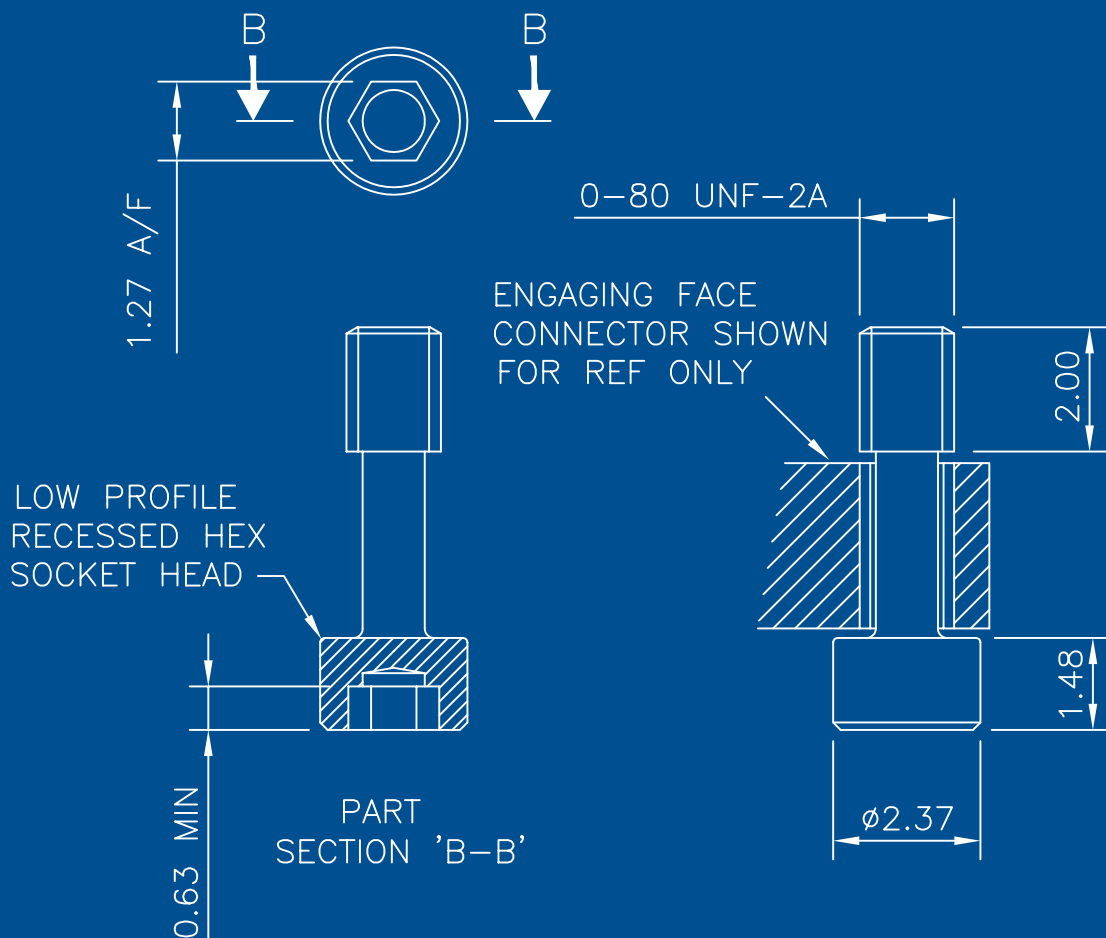
CINCH NANO-MINIATURE  
MIL-DTL-32139 STYLE  
.030 PITCH CRS,  
180 DEGREE PIGTAIL  
'PLUG' CONNECTOR SHOWN



CINCH NANO-MINIATURE  
MIL-DTL-32139 STYLE  
.030 PITCH CRS,  
180 DEGREE PIGTAIL  
'SOCKET' CONNECTOR SHOWN

LAYOUT	A basic		B centres		C basic	
	mm.	(in.)	mm.	(in.)	mm.	(in.)
9 Plug	10.23	.403	7.56	.298	4.76	.188
9 Socket	10.23	.403	7.56	.298	4.84	.191
15 Plug	12.51	.493	9.85	.388	7.05	.278
15 Socket	12.51	.493	9.85	.388	7.13	.281
21 Plug	14.80	.583	12.14	.478	9.34	.368
21 Socket	14.80	.583	12.14	.478	9.42	.371
25 Plug	16.32	.643	13.66	.538	10.86	.428
25 Socket	16.32	.643	13.66	.538	10.94	.431
31 Plug	18.61	.733	15.95	.628	13.15	.518
31 Socket	18.61	.733	15.95	.628	13.23	.521
37 Plug	20.89	.823	18.23	.718	15.43	.608
37 Socket	20.89	.823	18.23	.718	15.51	.611
51 Plug	26.23	1.033	23.57	.928	20.77	.818
51 Socket	26.23	1.033	23.57	.928	20.85	.821

## Hardware Detail





## Connector Performance Specifications

Property	Requirement	Test Method
Current Rating	1.8 amp (Fully loaded) 3 amp (contact pairs in isolation)	
Dielectric Withstanding Voltage	600VAC @ Sea level	MIL-STD-1344, Method 3001
Contact Resistance	Typically 34 Millivolts @ 1 Amp	EIA-364-06
Low Level Contact Resistance	Typically <36 Milliohms	EIA-364-23
Insulation Resistance	5000 megohms	MIL DTL 83513, EIA-364-21
Magnetic Permeability	Consult Cinch	
Mating Force	Typically 0.5 Newtons per contact	
Contact Retention	Consult Cinch	
Operating Temperature	-55°C to +125°C	MIL-DTL-83513, MIL-DTL-32139
Durability	>200 mated connector cycles	EIA-364-06
Salt spray (Corrosion)	48 Hours	EIA-364-26 Condition B
Shock	50 G's	MIL-DTL-83513, MIL-STD-1344A Method 20004.1 Condition E (EIA-364-26 Condition B)
Vibration	20 G's	MIL-DTL-83513, MIL-STD-202G Method 204 Condition D (EIA-364-28)

# Engineers Check List

## SECTOR

- Sea
- Aerospace
- Sub-Terrain
- Ground Support
- Armoured Vehicle
- Rail
- Space
- Radar
- Avionics
- Munitions / Missile

## CONNECTOR STYLE

- Rectangular
- Circular
- Z Axis Compression
- Power & Signal
- Hermetic
- IP Rated
- Filtered
- Edge Connector
- Multipole
- High Speed
- Rugged Enclosure

## WIRE TYPE

- Stranded
- Solid
- Twisted pairs
- Co-Axial
- Colour Code (Single / multi)
- Multi core
- Shielded
- Wire AWG \_\_\_\_\_
- Custom cable

## ENVIRONMENT

- Dust
- Moisture Resistant
- Full Water Immersion
- Chemical Compatibility
- RoHS
- Low Smoke / Zero Halogen
- Extreme Temperature Tolerance
- Flame Retardant

## MARKET SEGMENT

- Oil Petroleum Gas (OPG)
- Renewable Energy
- Military & Defence
- Commercial
- Computer
- Industrial
- Telecommunications
- Medical

## CONSTRUCTION

- Male  Female
- Crimp
- Solder
- PC Tail  90°  180°
- RF Signals
- Number Contact points \_\_\_\_\_
- Contact Pitch \_\_\_\_\_
- Housing Material
- Plastic  Metal

## CUSTOM INTERCONNECT

- Single Ended
- Double Ended
- Multi Limb Cable Assembly
- Strain Relief Backshell
- Environmental Backshell / Boot
- 360° Screened Backshell
- Moulded Strain Relief
- Woven
- Flexible Circuit

## SPECIFICATION

- Operating Temperature Range \_\_\_\_\_
- Mating Cycles \_\_\_\_\_
- Voltage Rating \_\_\_\_\_
- Current Rating \_\_\_\_\_
- Filtration Rating \_\_\_\_\_
- Materials / Finish \_\_\_\_\_
- Contact Plating \_\_\_\_\_
- Housing Plating \_\_\_\_\_



## Proven Excellence

For over 70 years, Cinch has been a reliable supplier of a variety of quality connector products to various industries. We are a multi-national manufacturer with manufacturing facilities in the U.S, U.K and Mexico.

Cinch has applied its extensive expertise in interconnection technology to engineer and manufacture connectors of various complexities using state-of-the-art technology and tooling. Mechanical design is accomplished using Pro/E® 3D solid modelling and AutoCAD® Supported by nonlinear and linear Finite Element Analysis, and Mold Flow software.

Our engineers utilize in-house capabilities in high frequency interconnect simulation, SPICE model generation and high frequency testing to develop the optimum product.

All products are validated in Cinch's First Article, mechanical, electrical, and environmental test facilities ensuring the finished products meet our customers' most stringent specifications.

Simply, your connectors are manufactured in state-of-the-art facilities AS9100 approved that are committed to customer satisfaction and continuous improvement.



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